IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Tony T. Coon et al.	§	Art Unit:	4121
Serial No.:	10/773,649	§		
		§	Examiner:	Tariq S. Najec-Ullah
Filed:	February 6, 2004	§		
For:	Method and Apparatus for Characterizing a Network Connection	§	Atty. Dkt. No.:	200312026-1 (HPC.0498US)

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Commissioner for Patents
P.O. Box 1450
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APPEAL BRIEF PURSUANT TO 37 C.F.R § 41.37

Sir:

The final rejection of claims 1-50 is hereby appealed.

I. REAL PARTY IN INTEREST

The real party in interest is the Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

Date of Deposit: November 3, 2008

I hereby certify that this correspondence is being electronically filed with the United States Patent and Trademark Office on the date indicated above.

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II. RELATED APPEALS AND INTERFERENCES

None.

III. STATUS OF THE CLAIMS

Claims 1-50 have been finally rejected and are the subject of this appeal.

IV. STATUS OF AMENDMENTS

No reply was made to the Final Office Action of June 23, 2008. All amendments have therefore been entered.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The following provides a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings by reference characters, as required by 37 C.F.R. § 41.37(c)(1)(v). Each element of the claims is identified by a corresponding reference to the specification and drawings where applicable. Note that the citation to passages in the specification and drawings for each claim element does not imply that the limitations from the specification and drawings should be read into the corresponding claim element.

Independent claim 1 recites a method for characterizing a network connection comprising:

> receiving (Fig. 1:5) parameters that specify a network connection (Spec., p. 8, ¶ [0013], lines 1-3);
>
> conveying (Fig. 2:40) to a protocol engine at least one of the received parameters, wherein the protocol engine is to implement a protocol stack (Spec., p. 11, ¶ [0019], lines 3-5; p. 13, ¶ [0023], lines 14-15);

receiving (Fig. 2:45) state variable information from the protocol engine pertaining to the network connection according to the conveyed at least one of the received parameters (Spec., p. 11, ¶ [0019], lines 5-6);

sensing (Fig. 1:15) when the network connection is initiated according to the received state variable information (Spec., p. 10, ¶ [0017], lines 1-3); and

storing (Fig. 1:20) the state variable information (Spec., p. 10, ¶ [0017], lines 8-9).

Independent claim 11 recites a network connection analysis unit capable of characterizing a network connection, said network connection analysis unit comprising:

a supervisor (Fig. 7:100) comprising:

a command register (Fig. 8:270) to receive parameters that specify a network connection (Spec., p. 15, ¶ [0029], lines 3-4), and

a source address register (Fig. 8:360) to receive an address referencing the location of state variables in a state memory (Spec., p. 16, ¶ [0032], lines 1-5);

a supervisory controller (Fig. 8:275) to:

direct a state variable request to a protocol engine according to the parameters, wherein the protocol engine is to implement a protocol stack (Spec., p. 15, ¶ [0029], lines 9-15; p. 14, ¶ [0028], lines 2-3);

receive the state variables provided by the protocol engine in response to the state variable request (Spec., p. 14, ¶ [0028], lines 3-5);

sense when the network connection is initiated by monitoring a location in the state memory as referenced by the contents of the source address register (Spec., p. 16, ¶ [0033], lines 1-10), and

a first computer readable medium controller (Fig. 5:500) to direct a plurality of the state variables from the state memory to a computer readable storage medium when the network connection is initiated (Spec., p. 17, [0035], lines 1-12).

Independent claim 21 recites a network connection analysis system comprising:

a memory (Fig. 16:705) to store instructions (Spec., p. 21, ¶ [0044], line 3);

a processor (Fig. 16:700) to execute instructions stored in the memory (Spec., p. 21, ¶ [0044], lines 2-3); and

a network connection characterization instruction sequence (Fig. 16:775) that, when executed by the processor, minimally causes the processor to (Spec., p. 22, ¶ [0045], lines 1-7):

receive (Fig. 1:5) parameters that specify a network connection (Spec., p. 8, ¶ [0013], lines 1-3);

convey (Fig. 2:40) to a protocol engine at least one of the received parameters, wherein the protocol engine is to implement a protocol stack (Spec., p. 11, ¶ [0019], lines 3-5; p. 13, ¶ [0023], lines 14-15);

receive (Fig. 2:45) state variable information from the protocol engine pertaining to the network connection according to the conveyed at least one of the received parameters (Spec., p. 11, ¶ [0019], lines 5-6);

sense (Fig. 1:15) when the network connection is initiated according to the received state variable information (Spec., p. 10, ¶ [0017], lines 1-3); and

store (Fig. 1:20) the state variable information (Spec., p. 10, ¶ [0017], lines 8-9).

Independent claim 31 recites a computer-readable storage medium having computer-executable functions for characterizing a network connection comprising:

a network connection characterization instruction sequence (Fig. 16:775) that, when executed by a processor, minimally causes the processor to (Spec., p. 22, ¶ [0045], lines 1-7):

receive (Fig. 1:5) parameters that specify a network connection (Spec., p. 8, ¶ [0013], lines 1-3);

convey (Fig. 2:40) to a protocol engine at least one of the received parameters, wherein the protocol engine is to implement a protocol stack (Spec., p. 11, ¶ [0019], lines 3-5; p. 13, ¶ [0023], lines 14-15);

receive (Fig. 2:45) state variable information from the protocol engine pertaining to the network connection according to the conveyed at least one of the received parameters (Spec., p. 11, ¶ [0019], lines 5-6);

sense (Fig. 1:15) when the network connection is initiated according to the received state variable information (Spec., p. 10, ¶ [0017], lines 1-3); and

> store (Fig. 1:20) the state variable information (Spec., p. 10. ¶ [0017]. lines 8-9).

As required by 37 C.F.R. § 41.37(c)(1)(v), the following identifies. for each independent claim (claim 41) involved in the appeal and for each depcndent claim (claim 42) argued separately, every means plus function and step plus function as permitted by 35 U.S.C. 112, sixth paragraph. Also, the structure, material, or acts described in the specification as corresponding to each claimed function are set forth with reference to the specification by page and line number, and to the drawing, if any, by reference characters, below.

Independent claim 41 recites a network connection analysis apparatus comprising:

> means (Fig. 16:775) for receiving (Fig. 1:5) parameters that specify a network connection (Spec., p. 8, ¶ [0013], lines 1-3);
>
> means (Fig. 16:775) for conveying (Fig. 2:40) to a protocol engine at least one of the received parameters, wherein the protocol engine is to implement a protocol stack (Spec., p. 11, ¶ [0019], lines 3-5; p. 13, ¶ [0023], lines 14-15);
>
> means (Fig. 16:775) for receiving (Fig. 2:45) state variable information from the protocol engine pertaining to the network connection according to conveyed at least one of the received parameters (Spec., p. 11, ¶ [0019], 5-6);
>
> means (Fig. 16:775) for sensing (Fig. 1:15) initiation of the network connection according to the received state variable information (Spec., p. 10, ¶ [0017], lines 1-3); and
>
> means (Fig. 16:775) for storing (Fig. 1:20) the state variable information (Spec., p. 10, ¶ [0017], lines 8-9).

Dependent claim 42 recites the network connection analysis apparatus of Claim 41 wherein:

> the at least one of the parameters includes at least one of a protocol identifier, a source address. a source port, a destination address and a destination port (Spec., p. 9, ¶ [0015], lines 1-5).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Claims 1, 2, 11, 12, 15-22, 29, and 31-42 objected to under 35 U.S.C. § 132(a) as introducing new matter.

B. Claims 11-20 and 31-40 rejected as unpatentable under 35 U.S.C. § 101 as being directed towards nonstatutory subject matter.

C. Claims 1-50 rejected as unpatentable under 35 U.S.C. § 103 over Engel (US 6,115,393) in view of Lovett (US 6,247,091).

VII. ARGUMENT

The claims do not stand or fall together. Instead, Appellant presents separate arguments for various independent and dependent claims. Each of these arguments is separately argued below and presented with separate headings and sub-headings as required by 37 C.F.R. § 41.37(c)(1)(vii).

A. Claims 1, 2, 11, 12, 15-22, 29, and 31-42 objected to under 35 U.S.C. § 132(a) as introducing new matter.

1. 1, 2, 11, 12, 15-22, 29, 31-42.

The Examiner objected to the above claims as purportedly introducing new matter. Even a cursory review of the amendments made to claims 12, 15-20, 29, and 33-40 will reveal that the amendments made to these claims are to improve the form of these claims, and add no substantive subject matter to such claims. Appellant fails to see how the amendments of claims 12, 15-20, 29, and 33-40 can even remotely be considered to introduce new matter.

The substantive amendments made to claim 1 include the addition of a "conveying" clause, and amendment of the "receiving state variable information" clause. The "conveying" clause is supported by at least the following passages of the specification: Fig. 2, element 40; p. 11, ¶ [0019], lines 3-5; p. 13, ¶ [0023], lines 14-15.

The amendment of the "receiving state variable information" clause in claim 1 is supported by at least the following passages of the specification: Fig. 2, element 45; p. 11, ¶ [0019], lines 5-6.

Similar amendments were made to claims 21, 31, and 41, which are supported by the at least the same passages identified above.

In claim 11, the "direct a state variable request" clause was amended, and the amendment is supported by at least the following passages of the specification: p. 15, ¶ [0029], lines 9-15; p. 14, ¶ [0028], lines 2-3. In claim 11, a "receive the state variable" clause was added, which is supported by at least the following passages of the specification: p. 14, ¶ [0028], lines 3-5.

Claims 2, 22, 32, and 42 were also amended to improve their form. In fact, subject matter was **cancelled** from these claims. Therefore, no new matter was added to any of the claims above.

Withdrawal of the 35 U.S.C. § 132 new matter objection is respectfully requested.

B. Claims 11-20 and 31-40 rejected as unpatentable under 35 U.S.C. § 101 as being directed towards nonstatutory subject matter.

1. Claims 11-20.

Independent claim 11 and its dependent claims were rejected under § 101 as purportedly not constituting statutory subject matter. The Examiner argued that the term "computer-readable storage medium" of claim 11 can be interpreted to read on signals or other forms of propagation and transmission media, or typewritten or handwritten text on paper, or other items failing to be an appropriate manufacture under § 101. 6/23/2008 Office Action at 2-3. The Examiner based this allegation on ¶¶ [0056]-[0057] on page 27 of the specification, which states that examples of computer-readable media include random access memory, read-only memory (ROM), CD-ROM,

floppy disks, and magnetic tape. Paragraph [0057] of the specification states that "it is contemplated that alternatives, modifications, permutations, and equivalents thereof are to be included in the scope of the appended claims." Nowhere in either of these passages is there any suggestion (much less a definition) that a computer-readable storage medium is directed merely to any of the following: a signal, a propagation and transmission medium, or typewritten or handwritten text on paper. Typewritten or handwritten text on paper would not be understood by a person of ordinary skill in the art to be a computer-readable storage medium. Moreover, a person of ordinary skill in the art would also understand the term "computer-readable storage medium" would not merely be directed to signals or other propagation and transmission media.

Moreover, note that claim 11 also recites a first computer-readable medium controller to direct a plurality of the state variables from the state memory to a computer readable storage medium. The Examiner failed to address the use of the term "memory" or "first computer-readable medium controller" in claim 11, which clearly would not be considered to be directed merely to signals, propagation and transmission media, or typewritten or handwritten text on paper.

In view of the foregoing, it is clear that the § 101 rejection of claim 11 and its dependent claims is erroneous. Reversal of the § 101 rejection of the above claims is respectfully requested.

2. Claims 31-40.

Independent claim 31 was also rejected as being directed to nonstatutory subject matter. Note that claim 31 recites a "computer-readable storage medium." As explained above, this term cannot be interpreted to be directed merely to signals, propagation and transmission media, or typewritten or handwritten text on paper. Moreover, the Examiner has not addressed the fact that

claim 31 also recites a **processor** that performs the recited tasks when a network connection characterization instruction sequence is **executed by the processor**.

In view of the foregoing, the § 101 rejection of claim 31 and its dependent claims should also be reversed.

C. Claims 1-50 rejected as unpatentable under 35 U.S.C. § 103 over Engel (US 6,115,393) in view of Lovett (US 6,247,091).

1. Claims 1, 3-10, 21, 23-31, 33-41, 43-50.

Independent claim 1 was erroneously rejected as obvious over Engel in view of Lovett. It is respectfully submitted that the obviousness rejection of claim 1 over Engel and Lovett is defective.

To make a determination under 35 U.S.C. § 103, several basic factual inquiries must be performed, including determining the scope and content of the prior art, and ascertaining the differences between the prior art and the claims at issue. *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 U.S.P.Q. 459 (1965). Moreover, as the U.S. Supreme Court held, it is important to identify a reason that would have prompted a person of ordinary skill in the art to combine reference teachings in the manner that the claimed invention does. *KSR International Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1741, 82 U.S.P.Q.2d 1385 (2007).

Here, even if Engel and Lovett could be hypothetically combined, the hypothetical combination of references would not have led to the claimed subject matter. As conceded by the Examiner, Engel fails to disclose the following elements of claim 1:

- conveying to a protocol engine at least one of the received parameters, wherein the protocol engine is to implement a protocol stack;
- receiving state variable information from the protocol engine pertaining to the network connection according to the conveyed at least one of the received parameters.

6/23/2008 Office Action at 4. Instead, the Examiner relied upon Lovett as purportedly disclosing the claim elements missing from Engel. *Id.* at 4-5. Specifically, the Examiner pointed to the following passages of Lovett: Figs. 4A, 4B, 5; column 5, lines 35-60. Although Fig. 5 of Lovett shows a "protocol engine," note that the "protocol engine" of Lovett performs completely different tasks than the "protocol engine" of claim 1. The only apparent similarity between "protocol engine" as used in claim 1 and "protocol engine" as disclosed in Lovett is that the same terminology is used. Except for this similarity, the claimed subject matter differs significantly from the subject matter of Lovett.

Lovett describes a bus-based interrupt mechanism to communicate interrupts within and between the nodes of a multinode multiprocessor system. Lovett, 2:54-62. The protocol engine of Fig. 5 of Lovett includes an interrupt controller 46 that receives an interrupt placed onto a bus and processes such interrupt. *Id.*, 5:43-6:15. Conveying an interrupt to the protocol engine of Lovett is **not** the same as conveying at least one parameter that specifies a network connection to a protocol engine that implements a protocol stack, as recited in claim 1.

The protocol engine of Lovett also fails to provide the following: state variable information pertaining to the network connection that is according to the conveyed at least one of the received parameters that specify the network connection, where the state variable information can be used to sense when the network connection is initiated. The protocol engine of Lovett has a state machine (52) that looks in a queue for an available interrupt, selects the available interrupt with the highest priority, and communicates that interrupt to a remote node. *Id.*, 6:16-33. Sending an interrupt by the protocol engine of Lovett to a remote node is not the same as sending state variable information pertaining to the network connection that is according to the conveyed at least one received parameter that specifies the network connection, where the state variable

information provided by the protocol engine can be used to sense when the network connection is initiated, as recited in claim 1.

In view of the fact that Lovett fails to disclose or hint at the claimed subject matter conceded by the Examiner to be missing from Engel, it is respectfully submitted that the obviousness rejection of claim 1 is defective for at least this reason.

Moreover, a person of ordinary skill in the art would have found no reason to combine the teachings of Engel and Lovett to achieve the claimed invention. Engel relates to a technique of monitoring communication dialogs that occur in a network of nodes, where information about the states of dialogs occurring in the network can be derived from packet contents. Engel, 2:32-41. A person of ordinary skill in the art would have found no reason whatsoever to incorporate the bus-based interrupt mechanism for communicating interrupts of Lovett into the packet monitoring system of Engel for the purpose of deriving states of dialogs. Interrupts provide absolutely no information whatsoever regarding states of dialogs occurring between nodes.

Moreover, it is respectfully submitted that communicating interrupts between nodes as taught by Lovett has nothing to do with the claimed subject matter, which relates to conveying, to a protocol engine, at least one parameter that specifies a network connection, where the protocol engine is to implement a protocol stack; receive state variable information from the protocol engine pertaining to the network connection according to the conveyed at least one received parameter; and sensing when the network connection is initiated according to the received state variable information. The interrupts of Lovett have nothing to do with parameters or state variable information pertaining to a network connection.

Since a person of ordinary skill in the art would not have been prompted to combine the teachings of Engel and Lovett to achieve the claimed invention, the obviousness rejection of claim 1 is defective for this additional reason.

In view of the foregoing, it is respectfully submitted that claim 1 and its dependent claims are non-obvious over Engel and Lovett.

Independent claims 21, 31, and 41, and their respective dependent claims are allowable for similar reasons stated above.

Reversal of the final rejection of the above claims is respectfully requested.

2. Claims 2, 22, 32, 42.

Claims 2, 22, 32, and 42 depend from respective base claims 1, 21, 32, and 41, and are therefore allowable for at least the same reasons as corresponding base claims. Moreover, claim 2 recites that conveying at least one of the parameters to the protocol engine comprises conveying to the protocol engine at least one of a protocol identifier, a source address, a source port, a destination address and a destination port.

As explained above, Lovett teaches the provision of interrupts over a bus to a protocol engine. This interrupt has nothing to do with any one of the following: a protocol identifier, a source address, a source port, a destination address, and a destination port. Moreover, as conceded by the Examiner, Engel fails to disclose conveying any information to a protocol engine; therefore, Engel fails to disclose or hint at conveying a protocol identifier, a source address, a source port, a destination address, or a destination port to a protocol engine.

The obviousness rejection of claim 2 is further defective for the foregoing reason.

Claims 22, 32, and 42 are further allowable for similar reasons above.

Reversal of the final rejection of the above claims is respectfully requested.

3. Claims 11-14, 19.

With respect to independent claim 11, the Examiner conceded that Engel fails to disclose directing a state variable request to a protocol engine according to parameters that specify a network connection, where the protocol engine is to implement a protocol stack; and receiving the state variables provided by the protocol engine in response to the state variable request.

The Examiner cited Lovett as purportedly disclosing these claim features conceded to be missing from Engel.

For similar reasons as stated above with respect to claim 1, Lovett also fails to provide any teaching or hint of the above claim subject matter missing from Engel.

Moreover, as explained above, a person of ordinary skill in the art would not have been prompted to combine the teachings of Engel and Lovett to achieve the claimed invention.

Therefore, the obviousness rejection of claim 11 and its dependent claims is defective.

Reversal of the final rejection of the above claims is respectfully requested.

4. Claims 15-18.

Claim 15 depends from claim 11 and is therefore allowable for at least the same reasons. Moreover, claim 15 recites an **off-line command register**, an **off-line** computer-readable medium controller, and an **off-line** analysis controller. These **off-line** elements of claim 15 are not even addressed by the rejection of claim 15. Therefore, the obviousness rejection of claim 15 and its dependent claims is further defective for the foregoing reason.

CONCLUSION

In view of the foregoing, reversal of all final rejections and allowance of all pending claims is respectfully requested.

Respectfully submitted,

Date: Nov 2, 2008

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VIII. APPENDIX OF APPEALED CLAIMS

The claims on appeal are:

1. A method for characterizing a network connection comprising:

receiving parameters that specify a network connection;

conveying to a protocol engine at least one of the received parameters, wherein the protocol engine is to implement a protocol stack;

receiving state variable information from the protocol engine pertaining to the network connection according to the conveyed at least one of the received parameters;

sensing when the network connection is initiated according to the received state variable information; and

storing the state variable information.

2. The method of Claim 1 wherein

conveying to the protocol engine at least one of the parameters comprises conveying to the protocol engine at least one of a protocol identifier, a source address, a source port, a destination address and a destination port.

3. The method of Claim 1 wherein sensing when the network connection is initiated comprises monitoring the value of a state variable indicative of the connection state of the connection.

4. The method of Claim 1 wherein sensing when the network connection is initiated comprises monitoring the value of a TCP/IP state variable called "STATE".

5. The method of Claim 1 further comprising:

sensing when the network connection terminates according to the state variable information:

retrieving stored state variable information according to the network connection after the network connection terminates; and

creating a history of the network connection according to the state variable information.

6. The method of Claim 5 wherein creating a history of the network connection comprises:

developing a network connection profile from the state variable information; and

creating a history of the network connection profile.

7. The method of Claim 6 wherein creating a history of the network connection profile comprises detecting an exceptional event.

8. The method of Claim 7 further comprising analyzing the exceptional event.

9. The method of Claim 1 further comprising:

retrieving the state variable information while the network connection continues; and

making the state variable information available on a periodic basis.

10. The method of claim 9 further wherein making state variable information available comprises:

creating a dynamic profile of the network connection according to the state variable information; and

making the dynamic profile available on a periodic basis.

11. A network connection analysis unit capable of characterizing a network connection, said network connection analysis unit comprising:

a supervisor comprising:

a command register to receive parameters that specify a network connection, and

a source address register to receive an address referencing the location of state variables in a state memory;

a supervisory controller to:

direct a state variable request to a protocol engine according to the parameters, wherein the protocol engine is to implement a protocol stack;

receive the state variables provided by the protocol engine in response to the state variable request;

sense when the network connection is initiated by monitoring a location in the state memory as referenced by the contents of the source address register, and

a first computer readable medium controller to direct a plurality of the state variables from the state memory to a computer readable storage medium when the network connection is initiated.

12. The network connection analysis unit of Claim 11 wherein the command register generates parameters including at least one of a protocol identifier, a source address, a source port, a destination address and a destination port and wherein the controller is to further load into the source address register a memory reference received from the protocol engine.

13. The network connection analysis unit of Claim 11 wherein the state memory referenced by the source address register contains an indictor of activity of the network connection.

14. The network connection analysis unit of Claim 11 wherein the state memory referenced by the source address register contains a TCP/IP state variable called "STATE".

15. The network connection analysis unit of Claim 11 further comprising an off-line connection analyzer comprising:

an off-line command register to receive an off-line analysis request that includes a connection specifier;

an off-line computer readable medium controller to retrieve state variables from a computer readable medium according to the connection specifier;

a format table to convert the state variables into a print stream;

an off-line analysis controller to cause the second computer readable medium controller to retrieve state variables and further to direct the retrieved state variables to the format table.

16. The network connection analysis unit of Claim 15 wherein the format table includes a profile description that correlates one or more state variables to a connection profile.

17. The network connection analysis unit of Claim 16 wherein the off-line connection analyzer further comprises an exceptional event detector to detect an exceptional event.

18. The network connection analysis unit of Claim 17 wherein the exceptional event detector is to analyze the exceptional event.

19. The network connection analysis unit of Claim 11 further comprising a real-time connection analyzer comprising:

a real-time command register to receive a real-line analysis request that includes a connection specifier;

a real-time computer readable medium controller to retrieve state variables from a computer readable medium according to the connection specifier; and

a display subsystem to generate a display signal according to the retrieved state variables.

20. The network connection analysis unit of Claim 19 wherein the display subsystem comprises:

a profile generator to create a profile of a network connection.

21. A network connection analysis system comprising:

a memory to store instructions;

a processor to execute instructions stored in the memory; and

a network connection characterization instruction sequence that, when executed by the processor, minimally causes the processor to:

receive parameters that specify a network connection;

convey to a protocol engine at least one of the received parameters, wherein the protocol engine is to implement a protocol stack;

receive state variable information from the protocol engine pertaining to the network connection according to the conveyed at least one of the received parameters;

sense when the network connection is initiated according to the received state variable information; and

store the state variable information.

22. The network connection analysis system of Claim 21 wherein the at least one of the parameters includes at least one of a protocol identifier, a source address, a source port, a destination address and a destination port.

23. The network connection analysis system of Claim 21 wherein the network connection characterization instruction sequence causes the processor to sense when the network connection has been initiated by minimally causing the processor to monitor the value of a state variable that is indicative of the connection state of the connection.

24. The network connection analysis system of Claim 21 wherein the network connection characterization instruction sequence causes the processor to sense when the network connection has been initiated by minimally causing the processor to monitor the value of a TCP/IP state variable called "STATE".

25. The network connection analysis system of Claim 21 further comprising an off-line connection analysis instruction sequence that, when executed by the processor, minimally causes the processor to:

sense when the network connection terminates according to the state variable information;

retrieve stored state variable information after the network connection terminates; and

create a history of the network connection according to the state variable information.

26. The network connection analysis system of Claim 25 wherein the off-line connection analysis instruction sequence comprises a network connection profile creation instruction sequence that, when executed by the processor, causes the processor to create a history by minimally causing the processor to:

develop a network connection profile from the state variable information; and

create a history of the network connection profile.

27. The network connection analysis system of Claim 26 wherein the network connection profile creation instruction sequence comprises an exceptional event detection instruction sequence that, when executed by the processor, minimally causes the processor to detect an exceptional event.

28. The network connection analysis system of Claim 27 wherein the network connection profile creation instruction sequence further comprises an exceptional event analysis instruction sequence that, when executed by the processor, minimally causes the processor to analyze the exceptional event.

29. The network connection analysis system of Claim 21 further comprising:

a display driver to generate a display signal; and

a real-time connection analysis instruction sequence that, when executed by the processor, further minimally causes the processor to:

retrieve the state variable information while the network connection continues; and

direct the state information to the display driver.

30. The network connection analysis system of Claim 29 wherein the real-time connection analysis instruction sequence comprises a dynamic profile generation instruction sequence that, when executed by the processor, minimally causes the processor to:

create a dynamic profile of the network connection according to the state variable information; and

direct the dynamic profile to the display driver.

31. A computer-readable storage medium having computer-executable functions for characterizing a network connection comprising:

a network connection characterization instruction sequence that, when executed by a processor, minimally causes the processor to:

receive parameters that specify a network connection;

convey to a protocol engine at least one of the received parameters, wherein the protocol engine is to implement a protocol stack;

receive state variable information from the protocol engine pertaining to the network connection according to the conveyed at least one of the received parameters

sense when the network connection is initiated according to the received state variable information; and

store the state variable information.

32. The computer-readable storage medium of Claim 31 wherein the at least one of the parameters includes at least one of a protocol identifier, a source address, a source port, a destination address and a destination port.

33. The computer-readable storage medium of Claim 31 wherein the network connection characterization instruction sequence causes the processor to sense when the network connection has been initiated by minimally causing the processor to monitor the value of a state variable that is indicative of the connection state of the connection.

34. The computer-readable storage medium of Claim 31 wherein the network connection characterization instruction sequence causes the processor to sense when the network connection has been initiated by minimally causing the processor to monitor the value of a TCP/IP state variable called "STATE".

35. The computer-readable storage medium of Claim 31 further comprising an off-line connection analysis instruction sequence that, when executed by a processor, minimally causes the processor to:

sense when the network connection terminates according to the state variable information;

retrieve stored state variable information after the network connection terminates; and

create a history of the network connection according to the state variable information.

36. The computer-readable storage medium of Claim 35 wherein the off-line connection analysis instruction sequence comprises a network connection profile creation instruction sequence that, when executed by a processor, causes the processor to create a history by minimally causing the processor to:

develop a network connection profile from the state variable information: and

create a history of the network connection profile.

37. The computer-readable storage medium of Claim 36 wherein the network connection history profile instruction sequence comprises an exceptional event detection instruction sequence that, when executed by a processor, minimally causes the processor to detect an exceptional event.

38. The computer-readable storage medium of Claim 37 wherein the network connection profile creation instruction sequence further comprises an exceptional event analysis instruction sequence that, when executed by a processor, minimally causes the processor to analyze the exceptional event.

39. The computer-readable storage medium of Claim 31 further comprising a real-time connection analysis instruction sequence that, when executed by a processor, further minimally causes the processor to:

retrieve the state variable information while the network connection continues; and

direct the state information to a display driver.

40. The computer-readable storage medium of Claim 39 wherein the real-time connection analysis instruction sequence comprises a dynamic profile generation instruction sequence that, when executed by a processor, minimally causes the processor to:

create a dynamic profile of the network connection according to the state variable information; and

direct the dynamic profile to the display driver.

41. A network connection analysis apparatus comprising:

means for receiving parameters that specify a network connection;

means for conveying to a protocol engine at least one of the received parameters, wherein the protocol engine is to implement a protocol stack;

means for receiving state variable information from the protocol engine pertaining to the network connection according to conveyed at least one of the received parameters;

means for sensing initiation of the network connection according to the received state variable information; and

means for storing the state variable information.

42. The network connection analysis apparatus of Claim 41 wherein the at least one of the parameters includes at least one of a protocol identifier, a source address, a source port, a destination address and a destination port.

43. The network connection analysis apparatus of Claim 41 wherein the means for sensing initiation of the network connection comprise a means for monitoring the value of a state variable indicative of the connection state of a network connection.

44. The network connection analysis apparatus of Claim 41 wherein the means for sensing initiation of the network connection comprise a means for monitoring the value of a TCP/IP state variable called "STATE".

45. The network connection analysis apparatus of Claim 41 further comprising:

means for sensing when the network connection terminates according to the state variable information;

means for retrieving stored state variable information according to the network connection after the network connection terminates; and

means for creating a history of the network connection according to the state variable information.

46. The network connection analysis apparatus of Claim 45 wherein means for creating a history of the network connection comprises: means for developing a network connection profile from the state variable information; and means for creating a history of the network connection profile.

47. The network connection analysis apparatus of Claim 46 wherein means for creating a history of the network connection profile comprises means for detecting an exceptional event.

48. The network connection analysis apparatus of Claim 47 further comprising means for analyzing the exceptional event.

49. The network connection analysis apparatus of Claim 41 further comprising:

means for retrieving the state variable information while the connection continues; and

means for making the state variable information available on a periodic basis.

50. The network connection analysis apparatus of Claim 49 wherein means for making the state variable information available comprises:

means for creating a dynamic profile of the network connection according to the state variable information; and

means for making the dynamic profile available on a periodic basis.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.